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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,275	07/25/2006	Kazuo Minemura	65341.00010	4912

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EXAMINER
ROE, JESSEE RANDALL

ART UNIT	PAPER NUMBER
1793	

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11/20/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,275	MINEMURA ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) *4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *17 November 2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 16 September 2009 has been entered.

Status of the Claims

Claims 1-9 are pending wherein claim 1 is amended and claim 4 is withdrawn from consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Trigg et al. (US 2,904,875).

In regards to claims 1-2 and 5, Trigg et al. ('875) discloses passing strips of magnetic material such as silicon-iron alloys, nickel-iron alloys, cobalt-iron alloys and the like through an aqueous coating composition comprising melamine-formaldehyde resin wherein after passing the magnetic material through the coating composition, the strips are wound and then placed in an annealing furnace (Example III and col. 5, lines 3-13). In the annealing furnace, all traces of alcohol, water and melamine-formaldehyde resin and decomposition products are removed (Example III).

The Examiner notes that because Trigg et al. ('875) discloses heating together the magnetic (metallic) material and the resin, removal of a passive film would be expected. MPEP 2112.01 I.

In regards to claim 3, Trigg et al. ('875) discloses that the application of the melamine-formaldehyde resin would occur by a composition having 470 parts of melamine-formaldehyde resin, 210 parts of magnesium hydroxide, 4 parts bentonite, 1500 parts isopropyl alcohol, and 1500 parts water (solvent) (Example III).

Claims 1 and 5-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lerche et al. (DD 296 967).

In regards to claims 1, 5 and 8-9, Lerche et al. (DD '967) discloses coating a steel X 45 CrNiW 18.9 testpiece with an aqueous solution comprising 0.03 weight percent melamine (resin) at a temperature of 95°C and then gas-oxynitriding the testpiece for 18 hours at 570°C (Example 1).

The Examiner notes that because Lerche et al. (DD '967) discloses heating the steel and the amino resin together and the instant specification states that when a heat treatment is performed in the presence of the amino resin, the amino resin decomposes (page 4, lines 17-20), removal of the passive film and decomposition of the amino resin would be expected. MPEP 2112.01 I.

`In regards to claims 6-7, Lerche et al. (DD '967) discloses that the nitride layer having increased hardness would be 0.1 mm in depth (Example 1).

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Furono (US 4,504,324).

In regards to claims 1 and 5, Furono ('324) discloses a method of removing a spontaneously formed oxide film (passive film) on the surface of an aluminum alloy

plate by heating in a 7% aqueous sodium hydroxide solution at 55°C for 3 minutes; dipping the aluminum alloy into commercial reagent grade nitric acid; electrodepositing by using an electrodeposition bath of water soluable acryl melamine resin, which would read on the melamine resin as recited in claim 5, and passing a direct current to the bath at 30°C for 2.5 minutes; and then baking for 30 minutes at 190°C (Comparative Example 1). Alternatively, in Comparative Example 1, Furono ('324) does not specify that the nitric acid concentration would be high enough to bring the aluminum alloy plate to a passive state (col. 6, lines 39-55). However, it would have been obvious to one of ordinary skill in the art to modify the nitric acid concentration in order to achieve the desired aluminum surface passivity. MPEP 2144.05 II.

With respect to the recitation "wherein the removing comprises heating together said metal material and an amino resin.", the Examiner notes that the plate would be in the resin when the current is applied to the bath (thus heating the plate) and then baked at 190°C (where the resin has been deposited on the plate).

With respect to the amended recitation "wherein the heating decomposes the amino resin" in line 5 of claim 1, the Examiner notes that the instant specification states that when a heat treatment is performed in the presence of the amino resin, the amino resin decomposes (page 4, lines 17-20). Therefore, any elevation in temperature would result in the decomposition of the amino resin, which would include baking for 30 minutes at 190°C, as disclosed by Furono ('324) (Comparative Example 1).

In regards to claims 2, Furono ('324) discloses baking at 190°C (which would occur in a furnace or oven) after electrodeposition (Comparative Example 1).

In regards to claim 3, Furono ('324) discloses an electrodeposition bath of water soluable acryl melamine resin (solvent) (Comparative Example 1).

In regards to claim 6-7, Furono ('324) discloses a coated aluminum plate (compound layer) after baking at 190°C (Comparative Example 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furono (US 4,504,324) as applied to claims 6-7 above, and further in view of Gredelj et al. (Characterization of aluminum surfaces with and without plasma nitriding by X-ray photoelectron spectroscopy).

In regards to claims 8-9, Furono ('324) discloses a method of removing a spontaneously formed oxide film (passive film) on the surface of an aluminum (abstract) or aluminum alloy plate as shown above, but Furono ('324) does not specify nitriding or carburizing.

Gredelj et al. discloses that plasma nitriding can be used for surface hardening aluminum if the native aluminum oxide layer is removed (pg. 240, col. 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply plasma nitriding, as disclosed by Gredelj et al., to

the aluminum having a removed oxide film, as disclosed by Furono (‘324), in order to successfully harden the surface of the aluminum, as disclosed by Gredelj et al. (pg. 240, col. 2).

Response to Arguments

Applicant's arguments filed 1 September 2009 have been fully considered but they are not persuasive.

The Applicant primarily argues that Furono (‘324) fails to disclose or suggest “wherein the heating decomposes the amino resin” as recited in claim 1. The Applicant further argues that the electrodepositing and the baking of Furono ('324) cannot correspond to the heating of the present invention since Furono ('324) fails to disclose or suggest that the electrodepositing and the baking decomposes the resin and Furono ('324) describes electrodepositing and baking would cause the resin to be electrodeposited on the plate.

In response, the Examiner notes that the instant specification states that when a heat treatment is performed in the presence of the amino resin, the amino resin decomposes (page 4, lines 17-20). Therefore, any elevation in temperature would result in the decomposition of the amino resin, which would include baking for 30 minutes at 190°C, as disclosed by Furono (‘324) (Comparative Example 1). The coating that forms on the surface of the aluminum in Furono (‘324) is not that of melamine resin, but rather boehmite (hydrous aluminum oxide) (col. 6, line 65 – col. 7, line 7).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571)272-5938. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/JR/